

CHAPTER 6

DEVELOPMENT OF AIRPORT WILDLIFE CONTROL PROGRAMS



This engine on a Boeing-737 sustained major damage when a female eider duck was ingested during landing at an airport in Maine, November 1995. (Photo courtesy National Transportation Safety Board)

6.1 INTRODUCTION

In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, greater emphasis is being placed on preparing airport Wildlife Hazard Management Plans that effectively deal with the problem. This heightened awareness and increased effort has raised many questions concerning the preparation and content of a Federal Aviation Administration (FAA)-approved Wildlife Hazard Management Plan for an airport. The specific events that trigger an ecological study¹ (Wildlife Hazard Assessment) and the specific issues that a Wildlife Hazard Management Plan must address for FAA approval and inclusion in the Airport's

¹USDA, Wildlife Services, uses the term "Wildlife Hazard Assessment." 14 CFR 139.337(a) uses the term "Ecological Study." In this context the two terms should be considered synonymous. Wildlife Hazard Assessment is the preferred term because it is more descriptive of what is actually being done.

Certification Manual (ACM) are presented in Title 14, Code of Federal Regulations, part 139.337 (14 CFR 139.337).

It is important to note that regardless of whether or not a Wildlife Hazard Assessment has ever been required or a Wildlife Hazard Management Plan has been developed, airport operators must be ready to deal with hazardous wildlife on or near the airport. The airport sponsor or manager must be prepared to take immediate action to deal with unexpected incursions of hazardous wildlife into aircraft movement areas, loading ramps, or parking areas (14 CFR 139.337[f]).

6.2 WILDLIFE HAZARD ASSESSMENT

The first step in preparing an airport Wildlife Hazard Management Plan is to conduct a Wildlife Hazard Assessment. The Wildlife Hazard Assessment, conducted by a wildlife damage management biologist, provides the scientific basis for the development, implementation, and refinement of a Wildlife Hazard Management Plan. Though parts of the Wildlife Hazard Assessment may be incorporated directly into the Wildlife Hazard Management Plan, they are two separate documents.



There should be zero tolerance for Canada geese and other large birds at airports. (Photo by R. A. Dolbeer, USDA)

6.2.a Requirement for Wildlife Hazard Assessment

Title 14 CFR 139.337 requires the certificate holder to conduct a Wildlife Hazard Assessment acceptable to the FAA Administrator when any of the following events occur on or near the airport:

1. An air carrier aircraft experiences a multiple bird strike or engine ingestion;
2. An air carrier aircraft experiences a damaging collision with wildlife other than birds;
3. Wildlife of a size or in numbers capable of causing an event described in paragraph (1) or (2) is observed to have access to any airport flight pattern or movement area.

Title 14 CFR 139.337(a)(1-3) details the events that trigger a Wildlife Hazard Assessment. The following provides a point by point comment on the regulations concerning the events that trigger a Wildlife Hazard Assessment.

14 CFR 139.337	Comments
139.337 (a) Each certificate holder shall ... conduct an ecological study ... when any of the following occurs on or near the airport.	
139.337 (a) (1) An air carrier aircraft experiences a multiple bird strike or engine ingestion.	If more than one bird is struck or if any bird(s) are ingested, an ecological study (Wildlife Hazard Assessment) is required.
139.337 (a) (2) An air carrier aircraft experiences a damaging collision with wildlife other than birds.	Aircraft collision with bats, deer, coyotes, woodchucks, alligators, etc. results in any aircraft damage.
139.337 (a) (3) Wildlife of a size or in numbers capable of causing an event described in paragraph (a) (1) or (2) of this section is observed to have access to the airport flight pattern or movement area.	Airports with a standing Notice to Airmen (NOTAM), announcements on their Automatic Terminal Information Service (ATIS), or comments in Airport/Facility Directory (A/FD) warning of wildlife hazards on or near the airport meet this condition.

6.2.b Necessary Elements of a Wildlife Hazard Assessment

Title 14 CFR 139.337 (b)(1-4) provides specific guidance as to what facts must be addressed in a Wildlife Hazard Assessment. The following is a point by point comment on each section of the regulations concerning the factors must be addressed in a Wildlife Hazard Assessment.

14 CFR 139.337	Comments
139.337 (b) The study required in paragraph (a) of this section shall contain at least the following:	
139.337 (b) (1) Analysis of the event which prompted the study.	What happened – who, what, when, where, why?
139.337 (b) (2) Identification of the species, number, locations, local movements, and daily and seasonal occurrence of wildlife observed.	What species of wildlife have access to the airport? What are their legal status, movement patterns, and seasonal patterns?

14 CFR 139.337	Comments
139.337 (b) (3) Identification and location of features on and near the airport that attract wildlife.	Wildlife are attracted to an airport because something exists on or near the airport that they desire, such as large open areas where they can loaf in relative safety; abundant food or water; escape, loafing, or nesting cover. These attractants need to be identified and evaluated.
139.337 (b) (4) Description of the wildlife hazards to air carrier operations.	This is a judgment call best made by a professional wildlife management biologist, trained in dealing with airport issues. Hitting 3-4 swallows is much less hazardous than hitting one 12-pound Canada goose (see Table 7-1).
Recommendations for mitigating identified hazardous wildlife attractants.	Although not currently required by regulations, it is very helpful if the biologist preparing the Wildlife Hazard Assessment provides <i>prioritized</i> recommendations for mitigating the hazardous wildlife attractants identified in 139.337(b)(3).

6.3 WILDLIFE HAZARD MANAGEMENT PLAN

6.3.a Requirement for Wildlife Hazard Management Plan

The FAA will consider the results of the Wildlife Hazard Assessment, along with the aeronautical activity at the airport and the views of the certificate holder and airport users, in determining whether or not a formal Wildlife Hazard Management Plan is needed (14 CFR 139.337 [c]). At a minimum, it is recommended that the airport manager develop and implement a plan to deal with any hazardous wildlife attractants or situations identified in the Wildlife Hazard Assessment.

If the FAA determines that a Wildlife Hazard Management Plan is needed, the certificate holder must then formulate and implement a Wildlife Hazard Management Plan, using the Wildlife Hazard Assessment as the basis for the plan (14 CFR 139.337 [d]). At

the same time, the FAA regional coordinator will contact the local U.S. Fish and Wildlife



Collisions with aircraft are not the only problem caused by birds at airports. Here, starlings have built their nest in an aircraft's wing. As part of the Wildlife Hazard Management Plan, aircraft owners and maintenance personnel should be reminded to carefully inspect any aircraft regularly parked outside. (Photo courtesy USDA)

Service (USFWS), Ecological Services Field Office and request information concerning the presence of federally listed or proposed endangered or threatened species or designated or proposed critical habitat on or near the airport (See FAA Airport Certification Program, Program Policy and Guidance No. 57, Section 7 Consultation on Endangered or Threatened Species, Appendix D.) The USFWS response will be forwarded to the airport operator to be taken into account when preparing the required plan.

If federally listed or proposed endangered or threatened species or designated or proposed critical habitat are present, the airport operator must prepare a Biological Assessment (50 CFR 402.13) assessing the impacts of the Wildlife Hazard Management Plan on these species or habitats. The Biological Assessment and draft Wildlife Hazard Management Plan must be submitted to FAA for review and approval.

Airport management may request the wildlife biologist who prepared the Wildlife Hazard Assessment to assist with the preparation of the Wildlife Hazard Management Plan and to review the finished plan. However, ultimate responsibility for the development and implementation of the plan rests with the airport operator. When the plan is completed the airport operator must submit the draft plan, together with a copy of the Biological Assessment, to the FAA for approval. The FAA will conduct any needed Section 7 consultations with the USFWS. Once approved, the plan becomes part of the Airport's Certification Manual and is enforceable.



Low spots on pavement and other airside areas that collect rainwater are highly attractive to birds. Improving drainage to eliminate such areas should be part of an airport's wildlife hazard management efforts. (Photo by R. A. Dolbeer, USDA)

6.3.b Necessary Elements of a Wildlife Hazard Management Plan.

The goal of an airport Wildlife Hazard Management Plan is to minimize wildlife populations on and around the airport that pose a threat to aviation safety or to structures, equipment and human health. The Wildlife Hazard Management Plan should address the following:

- Identify those responsible for implementing the plan,
- Identify and provide information on hazardous wildlife attractants on or near the airport,
- Identify appropriate wildlife management techniques to minimize the wildlife hazard,
- Prioritize appropriate management measures,
- Recommend necessary equipment and supplies, and
- Identify training requirements for the airport personnel who will implement the Wildlife Hazard Management Plan.

It is often helpful for the airport manager to appoint a Wildlife Hazards Working Group that periodically reviews the airport's Wildlife Hazard Management Plan and the plan's implementation to make recommendations for further refinements or modifications (see Chapter 8).

Title 14 CFR 139.337 (e) and (f) provide specific guidance as to what facts must be addressed in a Wildlife Hazard Management Plan. The following details how requirements of Part 139.337 (e) and (f) should be addressed in an FAA-approved Wildlife Hazard Management Plan (see also Appendix E).

14 CFR 139.337	Comments
139.337(e). The Wildlife Hazard Management Plan shall include at least the following :	
139.337(e)(1). The persons who have authority and responsibility for implementing the plan.	<p>Specific responsibilities for various sections of the Wildlife Hazard Management Plan must be assigned or delegated to various airport departments such as:</p> <ul style="list-style-type: none"> Airport Director Operations Dept. Maintenance Dept. Security Dept. Planning Dept. Finance Dept. Wildlife Coordinator Wildlife Hazards Working Group <p>Local law enforcement authorities that provide wildlife law enforcement and other support having a role to play are:</p> <ul style="list-style-type: none"> U.S. Fish and Wildlife Service State wildlife agency City police County Sheriff

14 CFR 139.337	Comments
<p>139.337(e)(2). Priorities for needed habitat modification and changes in land use identified in the ecological study (Wildlife Hazard Assessment) with target dates for completion.</p>	<p>Provide list of attractants (food, cover, and water) identified in Wildlife Hazard Assessment, with priorities for mitigation and completion dates. Attractants can be grouped by areas and ownership. (A list of completed habitat modification projects designed to reduce the wildlife strike potential can be included to provide a history of work already accomplished).</p> <p>Airport property: Aircraft Operations Area (AOA) Within 2 miles of aircraft movement areas (AMA) Airport structures</p> <p>Non-airport property: Within 2 miles of AMA Within 5 miles of AMA</p>
<p>Habitat/population management recommendations</p>	<p>Specific management plans for particular areas, attractants, species, or situations, as identified in the Wildlife Hazard Assessment. This section may include any or all of the following:</p> <p>Food/Prey Management: Rodents Earthworms Insects Grain/seeds Garbage – handling, storage Handouts (feeding wildlife)</p> <p>Habitat Management Vegetation Management AOA vegetation Drainage ditch vegetation Landscaping Agriculture</p> <p>Water Management Permanent Water Wetlands Canals/ditches</p>

14 CFR 139.337	Comments
<p><i>(Continued)</i> Habitat/population management recommendations</p>	<p>Holding ponds Sewage (glycol) treatment ponds Other water areas Ephemeral water Runways, taxiways, aprons Other wet areas Airport buildings Airfield structures Abandoned structures Terminal Airport construction Resource Protection Exclusion Repelling Chemical Auditory Visual Species-specific population management plans (e.g., deer, gulls, geese, and coyotes). These plans should address: Habitat modification Repelling Exclusion Removal</p>
<p>139.337(e)(3). Requirements for and, where applicable, copies of local, state and federal wildlife control permits.</p>	<p>Certain species of wildlife may be protected at all levels of government – local, state, federal, or may not be protected at all, depending on location and species. Therefore, the section should address the specific species involved and their legal status. The wildlife management permitting requirements and procedures should be described and address all levels of government having jurisdiction, i.e.</p> <p>Federal – 50 CFR parts 1 to 199. State – Fish and Game Code (or equivalent) City, county – ordinances</p>

14 CFR 139.337	Comments
<p><i>(Continued)</i> 139.337(e)(3). Requirements for and, where applicable, copies of local, state and federal wildlife control permits.</p>	<p>If pesticides are to be used, the following are also needed:</p> <ul style="list-style-type: none"> Pesticide use regulations: <ul style="list-style-type: none"> Federal- (FIFRA)] State (varies by state) Pesticide-use licensing requirements State regulations
<p>139.337(e)(4). Identification of resources to be provided by the certificate holder for implementation of the plan.</p>	<p>Lists identifying what the airport will supply in terms of:</p> <ul style="list-style-type: none"> Personnel Time Equipment (e.g., radios vehicles, guns, and traps). Supplies (e.g., pyrotechnics) Pesticides <ul style="list-style-type: none"> Restricted/non-restricted Application equipment Sources of Supply
<p>139.337(e)(5). Procedures to be followed during air carrier operations, including at least:</p>	
<p>139.337(e)(5)(i). Assignment of personnel responsibilities for implementing the procedures;</p>	<p>Who, when, what circumstances</p> <ul style="list-style-type: none"> Wildlife Control Personnel Wildlife Coordinator Operations Dept. Maintenance Dept. Security Dept. Air Traffic Control
<p>139.337(e)(5)(ii). Conduct of physical inspections of the movement areas and other areas critical to wildlife hazard management sufficiently in advance of air carrier operations to allow time for wildlife controls to be effective;</p>	<p>Who, when, how, what circumstances</p> <ul style="list-style-type: none"> Runway, taxiway sweeps AOA monitoring Other areas attractive to wildlife
<p>139.337(e)(5)(iii)). Wildlife control measures;</p>	<p>Who, what circumstances, when, how are Wildlife Control Personnel contacted? What methods are to be used to:</p> <ul style="list-style-type: none"> Repel Capture Kill

14 CFR 139.337	Comments
139.337(e)(5)(iv). Communication between wildlife control personnel and any air traffic control tower in operation at the airport.	Training in communication procedures Equipment needed Radios, cellular phones, lights
139.337(e)(6). Periodic evaluation and review of the Wildlife Hazard Management Plan for:	At a minimum, the airport operator should hold annual meetings, or after an event described in 139.337(a)(1 to 3), with representatives from all airport departments involved in wildlife hazard management efforts and the wildlife damage management biologist who did the original ecological study (Wildlife Hazard Assessment).
139.337(e)(6)(i). Effectiveness in dealing with the wildlife hazard;	Input from all airport departments, Air Traffic Control (ATC), and the wildlife biologist, as to effectiveness of the plan. Good records are required for evaluating the effectiveness of a program (see Chapter 8).
139.337(e)(6)(ii). Indications that the existence of the wildlife hazard, as previously described in the ecological study (Wildlife Hazard Assessment), should be reevaluated.	For example: Number of times wildlife seen on AOA. Requests for wildlife dispersal from ATC, pilots, or others. Increased number of strikes.
139.337(e)(7). A training program to provide airport personnel with the knowledge and skills needed to carry out the Wildlife Hazard Management Plan required by paragraph (d) of this section.	Training for: Wildlife Control Personnel. Other airport personnel. Pesticide user training and certification. (see Chapter 7)

14 CFR 139.337	Comments
<p>139.337(f). Notwithstanding the other requirements of this section, each certificate holder shall take immediate measures to alleviate wildlife hazards whenever they are detected.</p>	<p>Although not required as part of Wildlife Hazard Management Plan, the following information should be included to fulfill Part 139 requirements:</p> <p>Procedures and responsibilities for notifying the following regarding new or immediate wildlife hazards by and to:</p> <ul style="list-style-type: none"> Wildlife Control Personnel Operations NOTAM issuance/cancellation criteria and procedures. Maintenance Security Air Traffic Control Others <p>Responsibilities for implementing rapid response procedures for new or immediate hazards:</p> <ul style="list-style-type: none"> Wildlife Control Personnel Operations Maintenance Security Air Traffic Control Others
<p>139.337(g). FAA Advisory Circulars in the 150 series contain standards and procedures for wildlife hazard management at airports that are acceptable to the Administrator.</p>	<p>AC 150/5200-33 <i>Hazardous Wildlife Attractants on or Near Airports.</i></p>

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